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ABSTRACT

Following a review of research literature on eating disorders and the fitness image, the report finds that five socio-cultural influences have been associated with the increase and prevalence of eating disorders: the pressure to be thin; glorification of youth; the changing role of females; media image and marketing of the super woman; and the sport and fitness craze. These pressures have increased in modern society as society has passed the Greek idea of sport, to the current idea of fitness and better teams through starvation and steroids. Health professionals, sport coaches, instructors, and administrators should work against the following mainstream sport culture influences: (1) the "thinning edge" for judges and coaches; (2) obsolescent adolescent athletes; (3) harassed "Golden Girls" in a paternalistic sport world; (4) Sports Illustrated and Vogue fitness market; and (5) Anorexica Athletica and Bulimic Cosmetic Fitness. In summary the paternalistic sport power structure which controls power, prestige and privilege has led to the great "weight shift" which prompted women and men to turn to the "one stone solution" (one stone equals 14 pounds). If she could just lose one stone through starvation and he could gain just one stone through steroids, they would be winners. An opinionnaire and survey results are attached. (ABL)

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The Incidence, Detection and Treatment of Eating Disorders Among Athletes and Fitness Participants

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by

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Health professionals should be concerned about the role sport and fitness participation plays in eating disorders. Similarly, coaches, fitness instructors and sport administrators should be concerned about eating disorders, since they are often described as 'a diet and fitness/sport program gone wild.' Eating disordered athletes/fitness participants start a diet like anyone else, but for some unknown reason, the eating disordered individual is driven to further weight loss, even to the point of emaciation. Similarly, what starts out as a moderate healthy fitness or sport program ends up as frenzied compulsive exercise which dominates the person's life. The diet and fitness/sport program which starts out as the solution to stress problems of life, in turn becomes the problem. 'Anorexia Athletica' (A. Thuker, 1987), 'Exercise Anorexia and Bulimia' (P.J.V. Beaumont, 1986) and 'Cosmetic Sport and Fitness Ranging from Starvation to Steroids' (Moriarty & Moriarty, 1989) are the legacy.

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No reliable research studies or statistics exist on the incidence of eating disorders among athletes and aerobic exercisers. Estimates suggest that 5-20% of the female high school population and an even higher percentage of college and university female populations are involved in some form of eating disorder. Research studies suggest

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that the incidence is much higher among children and young adults involved in activities such as dance, gymnastics, figure skating, middle distance and marathon running, swimming and diving, rowing and wrestling. An increasing number of requests are being received by BANA-Can/Am for assistance from fitness management professionals from throughout North America suggesting that certain predisposed individuals in the fitness community are also at high risk.

Although eating disorders generally are perceived as a female adolescent problem, there are statistics that suggest that a growing number of males and young athletes (males and females) in their twenties, thirties and beyond are also engaged in this maladaptive behaviour.

Eating Disorders and Sport/Fitness Activity

Studies have suggested that the incidence of eating disorders is much higher in children and young adults in physical activities such as dance (Garner, 1983; Hamilton et al., 1985 & 1986; Anthony, Wood & Goldberg, 1982); figure skating (Perry, 1986); gymnastics (Kostar, 1983; Rosen, 1986); middle distance and marathon runners (Katz, 1986; Yates, Leehey & Shisslak, 1983) and a variety of other activities such as swimming, diving, rowing, riding and wrestling (Black & Burckes-Miller, 1988; Burckes-Miller & Black, 1988 a & b; Leichner, 1985; Rosen, 1986).

Rosen, McKeeg, Hough and Curley (1986) have suggested that some athletes tend to resort to dangerous weight control techniques if they have perceived themselves as obese at some time of their lives or have lost more weight than they originally intended. They surveyed 182 female collegiate athletes and found that thirty-two percent practices at least one of the weight control behaviours identified as bulimia.

This population did not engage in this behaviour to enhance physical beauty but attempted to lower their body weight to achieve the highest possible performance (Rosen et al., 1986).

Muni-Brander and Lachenmeyer (1986) concluded that from a population of male high school athletes and non-athletes, 25% reported vomiting to control weight, 12% reported bingeing and vomiting, 2.7% abused laxatives, 1.3% abused diuretics and 9.5% used diet pills to achieve weight loss.

Burckes-Miller and Black (1986) conducted a study with 695 male and female college athletes and reported both bulimic attitudes and behaviours. Twenty-four percent of athletes reported having recurrent binge eating episodes at least once every 1-8 days, 11.9% reported a loss or fear of losing control when eating and 5.3% ate until they were physically ill. Athletes also indicated that they were using severe weight control methods, 5.6% were engaged in self-induced vomiting, 3.7% abused laxatives, 11.9% fasted for at least twenty-four hours and 1.4% used enemas.

Katz (1986) suggests that extreme exercise such as long distance running can predispose individuals to eating disorders. He indicates that when weight loss is followed by excessive exercise, certain biological and social reinforcers become evident. This is also followed by a diminished appetite, increased narcissistic investment in the body, and an elevated production of endorphins which enhances mood. Katz (1986) reports that bulimic behaviour became apparent in relation with reduced running and dysphoria.

Burckes-Miller and Black (1988a) report that one-seventh of both male and female college athletes seem to have distorted body image and perceive themselves as fat even though they had lost weight and were not overweight. About one-third of the athletes were preoccupied with food and weight and about one-tenth did not feel in control when they ate. Approximately one-quarter of the male and female athletes engaged in bingeing behaviour and one-twentieth of athletes reported eating until they were physically ill and significantly more of them were women than men.

Recent Research on Eating Disorders and Body Image Distortion Among Aerobic Instructors and Exercise Participants

Therapist Patty Perry, Director of the Eating Disorder Clinic Inc. of Toronto, believes that the marketing of fitness has something to do with the increase in eating disorders.

> As female consumers of fashion or fitness, we are comparing ourselves to stereotypes that are often quite disturbed in eating and exercise habits. For example, Jane Fonda has the thin, fit body women desire, but this is the result of bulimia as a teenager, abuse of speed and diuretics to stay model-svelte until her early thirties, and involvement and promotion in excessive weight control up to the present. We sell fitness as an unmixed blessing, but this is not the case. Indeed, the fad proportion of fitness may be contributing to eating disorders. Women are trying to achieve weight control through overexercise. It's not true that the more you do the more it does for you. (Hooked on Perfection, Verve, August September, 1986: 79-80).

Perry goes on to point out that those who take fitness/sport too far may be called 'obligatory exercisers'. They behave in a way similar to eating disordered athletes in that they must have an exercise fix before they allow themselves to eat anything, use exercise to burn off

calories, and will not stop even if they are exhausted or injured. For them, exercise is an excessive and compulsive pursuit of the ideal body, not an activity that enhances wellbeing.

Little research has been done to date on the incidence of eating disorders and body image distortion among exercisers and those who instruct them. Blumenthal, Rose and Change (1985) provide a review of the relationship between anorexia nervosa and exercise. More recently Leichner, Rallo and Leichner (1989) at Douglas Hospital in Montreal conducted a study of attitudes and behaviour among exercising women, while Janice Rawlings (1989) and Christine Ford (1991) assessed the incidence of eating disorders and body image distortion among fitness instructors and members of the Ontario Fitness Council (OFC).

Leichner et al. (1989) studied eighty-five female volunteers from a community-based fitness program ('Feeling Fit' Company) which aims its program mainly at homemakers and working women. A series of questionnaires were utilized, including the Eating Disorder Inventory (EDI) (Garner, Olmsted, Polivy & Garfinkel, 1983). The Rawlings study (1989) also utilized the EDI, while the Ford study (1991) utilized the Bulimic Test (BULIT) (Smith & Thelen, 1984). Both Rawlings and Ford utilized Mable's (1989) Body Image Distortion questionnaire (BID) to assess the Ontario Fitness Council (OFC). The OFC is a professional association with membership made up primarily of aerobic instructors and administrators from community programs. The Rawlings study was made up of 370 members (333 females and 37 males); while the Ford study had 150 respondents (130 women and 20 men). These studies are reported elsewhere (Moriarty,

Rawlings, Ford & Leichner, 1991), so only a few highlights are presented here.

The Ford (1991) study which focused on bulimia and utilized the Bulimic Test (BULIT) showed 4.6% exceeding the bulimia/nervosa score of 88. Of these 4.6%, 0.8% were considered to have bulimic tendencies (with scores between 88-101) and the remaining 3.8% were considered to be diagnosed as clinically bulimic.

Ford (1991) provides interesting results on the Body Mass Index (BMI) and the Body Image Distortion questionnaire (BID). In terms of the BMI, 73.7% of aerobic instructors from the OFC registered at acceptable scores between 20-25, while 4.8% had scores over 25 and 21.5% had BMI scores under 20. This indicates that where there is concern among OFC members it should be for underweight rather than for overweight instructors. Similarly, in terms of the Body Image Distortion questionnaire (BID), the mean percentage that the sample of women distorted was +8.5%. Indeed 86.2% of the OFC female members overestimated their body size: 47.7% mildly up to 10%; 29.3% moderately from 11-20%; 6.9% markedly from 21-30%; and 2.3% extremely in excess of 30%. Similarly in the Leichner study over one half of the subjects said they were afraid of becoming obese; 47% engaged in binge eating and 9.4% had a history of self-induced vomiting. In the Rawlings study, the younger OFC members (less than 28 years old) tended to show a higher level of body image distortion than did the older members. Furthermore, members who had a body image distortion of 20% or more tended to have higher scores on the Eating Disorder Inventory. This implies that

a person's mental image of herself may be linked to a predisposition to eating disorders. Previous research indicates that a score of 20% or more may warrant careful monitoring of the individual and a score of 31% or more may be used as an indicator of eating disorders.

The results of these studies suggest that exercise participants and aerobic instructors are generally 'healthy' from an eating disorder and body image standpoint. However, there is a significant minority of underweight participants and instructors who overestimate their body size and have tendencies toward anorexia nervosa and bulimia. Further, readers should realize that is probably a conservative estimate of the problem, since the results of these studies were self-reported and the subjects in both studies were drawn from non-commercial fitness programs with an emphasis on wellness versus competitive elitist fitness activity.

Those interested in the organization and conducting of exercise and fitness programs should be concerned by the results of these studies for three reasons:

1. It is disturbing that a Canadian female population of exercise participants and aerobic instructors, the vast majority of whom are underweight or normal weight, distort their body image, perceive themselves overweight and seek weight reduction by dieting and exercise.
2. The fact that the sample does not, in general, differ from a female Canadian population reference group should provide little reassurance, given the incidence of eating disorders in this population.

3. These studies probably provide a best-case scenario, since the exercisers and instructors were drawn from a non-profit program and professional organization, respectively. Results on more commercial and competitive programs might result in more startling results.

Those involved in promoting wellness and preventing eating disorders should be encouraged by the willingness of exercisers and instructors to be involved in these studies and readiness to receive the results. Requests received by the Bulimia and Anorexia Nervosa Association (BANA) for assistance from fitness management professionals indicate that there is genuine concern about this problem in the fitness community. In response to these inquiries BANA has developed a brochure on "Sports, Fitness, Health and Eating Disorders" which provides a definition and description of anorexia nervosa and bulimia, information on preventive education, danger signs for physicians/researchers and coaches/fitness instructors and recommendations for referral.

National Collegiate Athletic Association Survey

While drug and alcohol abuse grabs most of the headlines at the institutional level, a recent survey by the NCAA sports-science division reveals that eating disorders quietly have become a significant health problem among college student-athletes (Dick, 1990).

Sixty-four percent of NCAA member institutions responding to the voluntary survey reported that at least one student-athlete had experienced an eating disorder during the past two years. The vast majority of the reports (93 percent) were in women's sports.

Results of the survey are reported in Table 1 - Women and Table 2 - Men below.

The first column "Sponsoring Schools" indicates the number of NCAA institutions sponsoring a given sport in the 1989-90 season. The second column "Schools Reporting Eating Disorders" indicate the number of institutions reporting at least one eating disorder in a particular sport from 1988 to 1990. The third column indicates the percentage of schools sponsoring a given sport that reported an eating disorder.

Table 1 shows that women's gymnastics was the sport with the largest percentage of sponsoring schools reporting an eating disorder (52 reports out of 108 sponsoring schools - 48%). The next highest percentages were in women's cross country (23%); women's swimming, not including diving (21%); and women's track and field events (21%). Women's cross country was the sport with the most reports (146).

Table 2 shows that wrestling was the men's sport with both the most reports (20) and the greatest percentage of sponsoring schools reporting an eating disorder (7%). Men's cross country was second in both categories, with 17 reports (3%) of eating disorders from 664 sponsoring schools.

Randall W. Dick, NCAA Assistant Director of Sports Sciences, has pointed out that

> The higher prevalence of eating disorders in female as opposed to male sports is similar to reports of eating disorders in other populations; however, it also is important to note that eating disorders are not completely limited to females." (Dick, 1990: 1).

TABLE 1 - WOMEN

(810 reports - 93% of all reports)

Sport	Sponsoring Schools	Schools Reporting Eating Disorder	% Sponsoring Schools Reporting Eating Disorder
Gymnastics	108	52	48%
Cross Country	642	146	23%
Swimming(only)	395	83	21%
Track (running events only)	537	111	21%
Basketball	762	101	13%
Soccer	293	37	13%
Field Hockey	219	27	12%
Volleyball	716	84	12%
Lacrosse	119	13	11%
Softball	556	53	10%
Skiing	39	3	8%
Tennis	694	58	8%
Golf	143	10	7%
Diving (only)	395	22	6%
Track (field events only)	537	10	2%

Note: No eating disorders were reported in women's fencing and rifle.

TABLE 2 - MEN

(62 reports - 7% of all reports)

Sport	Sponsoring Schools	Schools Reporting Eating Disorder	% Sponsoring Schools Reporting Eating Disorder
Wrestling	278	20	7%
Cross Country	664	17	3%
Gymnastics	45	1	2%
Track (running events only)	554	9	2%
Football	530	6	1%
Swimming (only)	360	2	1%
Baseball	672	1	*
Basketball	767	3	*
Diving (only)	360	1	*
Soccer	544	1	*
Tennis	675	1	*

*Less than one percent.

Note: No eating disorders were reported in men's fencing, golf, ice hockey, lacrosse, rifle, skiing, track field events, volleyball and water polo.

In addition, although some sports may have higher risk of athletes with eating disorders, this survey shows that eating disorders were reported in a wide range of activities. Because an eating disorder is a complex problem often hidden by those suffering from it, no sport should be considered 'exempt' from the problem. (Ibid.)

Dick goes on to point out that the percentage of sponsoring schools reporting an eating disorder probably is less than the actual rate of occurrence, because it is unlikely that every school sponsoring a particular sport responded to the survey. For example, 108 institutions sponsored women's gymnastics in 1989-90 and 52 institutions voluntarily reported at least one case of an eating disorder. If all of the other 56 institutions sponsoring women's gymnastics responded to the survey and reported no eating disorders, then 48% would be the actual percentage of NCAA women's gymnastics programs with eating disorders. However, it is probable that some of the non-responding institutions sponsored gymnastics programs in which an eating disorder was present. Therefore, the percentage of sponsorship reporting an eating disorder represents the minimum rate of occurrence in NCAA programs. In view of the negative effect that reports of this nature could have upon recruiting programs and program image, it is highly likely that a number of the non-reporting institutions with eating disorder problems opted out of this survey motivated by public relations considerations.

Sports/Fitness Programs and Maladaptive Behaviour

A number of studies at the University of Windsor Sport Institute for Research/Change Agent Research (SIR/CAR) conducted throughout the

'70s and the '80s show that when children/youth sport programs are professionalized, commercialized and politicized, maladaptive behaviour among participants was a probable outcome. (Brown, Holman & Moriarty, 1984; Hyrcaiko, Moriarty & McCabe, 1978; Moriarty et al., 1982; Donovan & Moriarty, 1986; Moriarty, 1983; Moriarty, Guilmette & Zarebski, 1981; Moriarty, Guilmette & Leduc, 1978; Holman & Moriarty, 1989). Macintosh, Bedecki and Franks in their study of Sport and Politics in Canada: Federal Government Involvement Since 1961 (1987) arrive at the same conclusion. Most recently the Dubin Commission (1990) resulting from the positive steroid test of former gold medalist Ben Johnson at the 1988 Olympics, provides testimony to the extent of steroid abuse in amateur athletics. For the most part, these studies focus on males, since until recently systemic discrimination in North America has made both amateur sport and professional athletics mainly a male domain. The women's movement and equity advancement over the last decade has lead to a number of studies showing overemphasis in women's sports, as is the case in men's sports, leads to maladapted behaviour which invariably takes the form of eating disorders.

Mariah Burton-Nelson (1991) in Are We Winning Yet? How Women Are Changing Sports and Sports Are Changing Women makes some interesting points in her opening chapter on "Playing With the Boys: An Introduction" (1991: 310). She points out that there has been considerable change in women's sports which accompany the "sprint towards equal opportunity" (1991: 4), which was prompted by Title IX included in the Educational Amendment to the Civil Rights Act (1972) and the fitness movement

of the '80s. Prior to the equity emphasis, women athletes used to practice and play in the privacy of the 'women's gym' engaging in a sport ethic characterized as 'socializing sport' which promoted skill, friendship, fair play, 'high moral conduct', and participation for all, as contrasted with men's athletic business which was characterized by an elitist 'win-at-all-costs' mentality, commercialization and centralization. Many female coaches and administrators of the 'old school' feared that the values they had been teaching for decades would be destroyed by the influx of money, prestige and cutthroat competition that accompanied men's programs.

What has been the outcome of this movement? On the positive side, women have had an opportunity to participate and develop physical competence and skill, to develop self-confidence and face the challenge of being a role model. In North American high schools, approximately two million women play interschool sports, up from a third of a million in 1971. In college, approximately thirty-four percent of the athletes are female, and over a third of the U.S. and Canadian Olympic teams are females. TSN in Canada and ESPN in the U.S., the sports networks, cover women's sport as a matter of course and more women's sports are appearing on the major networks. In terms of print media, USA Today, Sports Illustrated and most daily papers devote between 15 to 20% of their sports pages to women.

Yet every gain includes a loss. As women's sports have become more popular and lucrative, men have claimed leadership roles, not only in coaching, but also in management. In 1982, the National Collegiate

Athletic Association (NCAA) began offering televised women's championships leading to the demise of the Association for Intercollegiate Athletics for Women (AIAW), the body of female teachers, administrators and students which had made decisions about women's college sports.

The world of sports is still mainly paternalistic. The NCAA, which governs both men's and women's sports, is predominantly male and its Canadian counterpart, the CIAU (Canadian Interuniversity Athletic Union) is predominantly male. More than half of all the women's college teams in the United States are now coached by men, and there is a similar trend in Canada.

On the professional level, males act as executive directors for the Women's Tennis Association, Ladies Professional Golf Association and the Ladies Pro Bowlers Tour. The U.S. Olympic Committee has 105 members on its executive board - 91 are men, while in Canada of the 52 members on the Canadian Olympic Association, only 6 are women. Of the 38 national governing bodies of sports in the United States (such as the U.S. Figure Skating Association) 34 have male presidents. In Canada, of the 65 or so sports represented at the national centre, women represent only 13% of the head coaches, 29% of the senior executives and 23% of the high performance directors. In terms of salary, none of the women were represented in the highest category and the percentage went up as the remuneration went down. One quarter of the women, compared to less than 5% of the men had experienced overt discrimination (Hatch, 1991: 8).

Information about women's athletics is filtered through male writers, photographers, broadcasters and publishers: approximately 9,650 of the nation's 10,000 print and broadcast sports journalists in the U.S. are men and statistics are even more grim in Canada. As Mariah Burton-Nelson points out, "now women play in the 'men's gym', under male rules, male officiating, male coaching, and too often, male harassment" (1991: 5). In general, women involved in athletics and physical activity find themselves in a hostile, paternalistic 'Manstream' sport world.

Competitiveness in Sport/Fitness and Eating Disorders

Garner (1984) reported studies assessing the relevance of competitiveness in terms of eating disorders. He reported the results of a study comparing dance students and music students from high expectation settings. The EAT (Eating Attitude Test) was administered and showed a percentage deviation from average body weight of -17.9 for dance students and only -6.3 for music students (Garner, 1983). In a further analysis looking at the prevalence of anorexia nervosa and symptoms of anorexia nervosa, the total dance group was further subdivided and it was found that those in the more competitive setting were -19.8% deviant from average body weight, while those in a less competitive setting were -8.6 from normal body weight. The message here is that the degree of competitiveness bears a direct relationship with the degree of severity of eating disorders, and further that women involved in activities such as dance (and it might be added, gymnastics, figure skating, aerobic dance and fitness programs) which carry with them an expectation

of slimness and also place physical demands upon the participants, place the individual much more at risk than competitive settings such as university and music students encounter (-3.7 deviation from average body weight) or even modeling students (-11.9%).

Another study worthy of note is that of Anthony, Wood and Goldberg (1982) of 245 college females involved in areas of study emphasizing exercise (physical and health education) or body image (dance and drama). Utilizing an Eating Attitude Test (EAT), the researchers found significantly higher scores among dance and drama students than among those majoring in physical and health education (or English). Their findings provide further indication that those at risk to eating disorders gravitate towards activities of endeavour that emphasize body image, rather than towards areas merely emphasizing physical exercise.

Finally, an interesting study by Jorgun Sundgot-Borgen on "Pathogenic Weight Control and Eating Disorders Among Female Athletes," presented at the University of Windsor in the Fall of 1990, demonstrates that sports can be a factor either precipitating or preventing an eating disorder - depending upon the nature of the sport. This study of 521 athletes and 447 controls utilized the Eating Disorder Inventory (EDI) and a demographic questionnaire to investigate the incidence of eating disorders, not only among athletes and controls, but also with the athletic group subdivided depending on the nature of the sport. Six categories were utilized for sports groups: 1) technical, including things such as long and high jumps, sailing and golf; 2) endurance, such as middle and long distance running, rowing, swimming,

and speed skating; 3) aesthetics, such as dance, gymnastics, figure skating and diving; 4) weight dependent, such as wrestling, judo and karate; 5) ball games, such as basketball, volleyball, tennis and badminton and 6) power, such as powerlifting, shot put and discus.

Results showed that 32% of the athletes and 20% of the controls were dieting, and further that 34% of the dieting athletes and 25% of the dieting controls used pathogenic weight control methods. Twenty-five percent of the controls and 23% of the athletes were classified as risk subjects for developing an eating disorders. The highest frequency of athletes using pathogenic weight control methods and athletes defined as risk subjects were found in the endurance, aesthetic and weight dependent sports. A significantly higher number of athletes compared to controls used pathogenic weight control methods. Athletes competing in the aesthetic, weight dependent and endurance sports showed the highest number of athletes revealing significant symptoms of eating disorders.

In many sports (gymnastics, figure skating, distance running and cross country skiing) low weights are considered necessary for optimal appearance and performance (Brownell, Nelson, Steen and Wilmore, 1987). There is a strong negative correlation between percent body fat and performance in the sport where this has been studied (Wilmer & Costa, 1987). Some sports even impose specific weight limits for competition (wrestling, rowing and horse racing). In other sports such as gymnastics, dance, figure skating and diving, aesthetic appeal is considered important. However, as pointed out by Rosen (1991) in response to a BANA survey:

> Many athletes who engage in drastic weight control do so under the assumption that weight reduction will improve performance. It is important for the athlete to have a realistic idea of the impact of weight and diet on performance. Moreover, it needs to be clarified that the presence an eating disorder almost certainly interferes with performance as an athlete. Although there are some notable instances in which athletes have been quite successful while suffering from an eating disorder, these are the exceptions. The metabolic consequences of symptoms such as vomiting and laxative abuse undoubtedly have a negative effect on performance and can be fatal. (Garner & Rosen, 1991)

Results of the Borgen Study presented in Table 3 (percentages from 168 subjects who scored above known anorexics on the eight subscales of the Eating Disorder Inventory) show little difference in scores between the non-athletes (N=101) and the total athletes (N=67); however, when the athletes are divided into athletes in activities with an emphasis on leanness (N=35), athletes in activities with no emphasis on leanness (N=32) there is a significant difference. For example, athletes in activities with emphasis on leanness exceed non-athletes in six of the eight subscales (drive for thinness, bulimia, perfectionism, interpersonal distrust, interoceptive awareness and maturity fears). On the other hand, athletes and activities with no emphasis on leanness had lower scores on seven of the eight subscales (drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interoceptive awareness and maturity fears). When the total number of subscale scores for athletes who scored above the mean value for known anorexics were compared, the athletes in activities that emphasized leanness had more high scores (21%) than those not emphasizing leanness (11%) (Borgen, 1987). When asked why they were dieting, athletes indicated

Table 3 Percentages of 168 Subjects Who Scored Above Known Anorexics on the Eight Subscales of the Eating Disorders Inventory

	Attitude/Behavior Subscales				Psychological Trait Subscales			
Group	Drive for Thinness	Bulimia	Body Dissatisfaction	Ineffectiveness	Perfectionism	Interpersonal Distrust	Interoceptive Awareness	Maturity Fears
Nonathletes (n = 101)	19	22	45	3	31	5	5	6
Athletes in activities with emphasis on leanness (n = 35)	23	31	43	3	37	17	6	11
Athletes in activities with no emphasis on leanness (n = 32)	16	19	19	0	22	9	0	0
Total athletes (n = 67)	19	25	31	1	30	13	3	6
All subjects (N = 168)	19	23	39	2	30	8	4	6

it was to enhance performance (67%), or they were told by their coaches (38%), parents (27%) or doctors (5%), or to improve attractiveness (14%). Controls, on the other hand, dieted mainly to improve attractiveness (95%), with only 6% interested in enhancing performance. Certainly health professionals with clients involved in sports which are aesthetic in nature, weight dependent and/or involve endurance should be particularly vigilant in guarding against eating disorders.

The message seems to be clear here for therapists, coaches, fitness leaders and instructors: namely, physical activity in and of itself does not precipitate eating disorders; however, if programs are presented with an emphasis on elitism, winning and body image, and use weight loss to enhance performance, they may very well serve as a precipitating or perpetuating activity for the eating disordered individual.

Treatment of Athletes and Fitness Participants with Eating Disorders

There has been a considerable amount of quality research conducted and published on the incidence and detection of eating disorders among athletes, aerobic exercisers and dancers, but limited published literature on the treatment of this target population. In conjunction with this presentation, over the summer BANA sent an opinionnaire on this topic to approximately three dozen treatment therapists and university/college sport, fitness health centres and community self-help groups with treatment components. Two-thirds of this group responded or were successful in providing a response through foreign mail services and our periodically rotating strike-bound Canadian mail system. Responses were received from Australia, the U.K., Norway, the United States

(California, Florida, Indiana, Kansas, Michigan, Ohio, and Oregon) and Canada (British Columbia, Nova Scotia, Ontario amd Quebec). The names of the respondents and their paraphrased opinions are reported and acknowledged in the appendix with a very sincere thanks. Listed below in Table 4 and Table 5 is a consensus of the responses from health professionals and university/community centres, respectively.

Results of this survey provide grounds for both pessimism and optimism regarding the future of eating disorders among sport and fitness participants. Pessimism stems from the response of one prominent medical authority, Chief de Mission of an Olympic Medical Team and Chairman of a National Sport Medical Council (of a country which will remain unnamed) whose one-paragraph response stated, "I have no particular recent experience in treating individuals with eating disorders." Would he have responded similarly on an opinionnaire on drug abuse or on the male sport problem of steroids. We think not, particularly in a country such as Canada where we spent in excess of three million dollars on the Dubin Commission of Inquiry Into the Use of Drugs and Banned Practices Intended to Increase Athletic Performance (1990). The positive steroid test of Ben Johnson at the Seoul Olympics prompted the federal government of Canada to spend more on the Dubin Commission than the total cost of sending the Canadian contingent to the Olympics. Regrettably, no similar efforts have been made in the eating disorder area, a medical problem with more chronicity and a higher mortality rate than that attributed to performance-enhancing drugs.

TABLE 4—CONSENSUS: HEALTH PROFESSIONALS

EATING DISORDERS AND SPORT AND FITNESS ACTIVITIES

1. **Clients involved in sport/fitness activity:**
   Percentage: 50%: Range: 10%-80%.

2. **Type of sport/fitness exercise:**
   1. aesthetic (e.g. gymnastics, diving & figure skating)
   2. weight dependent (e.g. wrestling & rowing)
   3. endurance (e.g. jogging, cycling & swimming)
   4. ball games (e.g. volleyball)
   5. fitness (e.g. aerobic, dance & exercise).

3. **Problems with client:**
   Pressure from coaches/trainers to lose weight:
   excessive reliance on weight lose to improve performance:
   obsessive exercise and guilt when not overtraining:
   stress fractures:
   culturally endorsed abnormal behaviour.

4. **Problems with sport/fitness establishment:**
   Ignorance of dieting dangers:
   no counselling of athletes regarding dangers of being thin vs. fit: denial of the problem:
   fear on part of coaches/trainers & team doctor authority will be usurped:
   agencies cooperate once informed and convinced of problem.

5. **Referrals:** physicians, parents/teachers, coaches/trainers/team physicians.

6. **Treatment Modality:**
   Cognitive: behavioural: psychotherapy: pharmacotherapy: family therapy: involve health educator and/or coach/trainer in the process and use athlete's desire to achieve change stressing long term effect of maladaptive behaviour.

7. **Continued athletic/exercise activity during treatment:**
   Ranges from no activity in acute stage: most favour moderate supervised activity but avoidance of competition and balance in nutrition, rest, and activity.

8. **Role of coach/trainer/administrator:**
   Part of the problem but could be part of the solution:
   often precipitate and perpetuate eating disorders:
   decrease emphasis on body weight:
   increase awareness of risk of dieting and being under weight: osteoporosis, menstrual problems, etc.:
   provide nutritional guidance: know signs, symptoms, and characteristics: refer to medical practitioners.
   Be part of medical team!

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TABLE 5—CONSENSUS: UNIVERSITY & COMMUNITY HEALTH & FITNESS CENTRES

EATING DISORDERS AND SPORT AND FITNESS ACTIVITIES

1. **Clients involved in sport/fitness activities:**
   Percentage: 35%: Range: 10%-100%.

2. **Type of sport/fitness exercises:**
   See Table 6: NCAA Sponsoring Schools Reporting Eating Disorders.

3. **Problems with client:**
   Denial of problem: misconceptions and myths regarding food, weight, and performance: seeking short term performance at cost of long term health: coaches counselling for unhealthy weight practices: i.e. starvation to steroids.

4. **Problems with sport/fitness establishment:**
   Failure to acknowledge the problem: lack of preventive programs: reticent to refer to E.D. program: failure to evaluate health lose for competitive gain.

5. **Referrals:**
   Peers, parents, health professionals, occasionally coaches.

6. **Treatment Modality:**
   Performance Team: University of Texas, Austin--(M.D., psychologist, athletic trainer, nutritionist, coach, and administrator).

7. **Continued athletic/exercise activity during treatment:**
   Restrict if health at risk: moderate and monitor so organized sport is not just replaced by personal addictive exercise.

8. **Role of coach/trainer administrator:**
   Educate on sign, symptoms, and characteristics: identify those at risk: referral for treatment: cooperate in treatment and program: preventive education NCAA & S.M.C. films and publications.

TABLE 6: NCAA SPONSORING SCHOOLS REPORTING EATING DISORDERS

SPORT	SPONSORING SCHOOLS REPORTING EATING DISORDERS	
	93% FEMALES	7% MALES
Gymnastics	48%	2%
Cross Country	23%	3%
Swimming (only)	21%	1%
Track (running events only)	21%	2%
Basketball	13%	*
Soccer	13%	*
Field Hockey	12%	
Volleyball	12%	
Lacrosse	11%	
Softball	10%	
Skiing	8%	
Tennis	8%	
Golf	7%	*
Wrestling		7%
Diving (only)	6%	*
Track (field events only)	2%	
Football		1%
	N=810	N=67

* less than 1%

Adapted from the NCAA News, September 17,1990.

Optimism is in order, however, in the response of knowledgeable concerned professionals in both the medical and the sport community. For example, a model program is in operation at the University of Texas at Austin in the women's athletic department. Randa Ryan, athletic trainer, reports a comprehensive assessment, referral and treatment program which is in its second year of operation. The information below is drawn from personal interaction and the "Management of Eating Disorder Problems in Athletic Settings' by Randa Ryan (Brownell, 1991).

Table 7 outlines the ongoing nutrition program for all female student athletes. In terms of prevention, there is an ongoing educational program for all incoming freshmen/transfers, in addition to newsletters, individual nutrition counseling and access to self-help programs on and off campus. In terms of detection and referral, clients can be referred by staff members or coaches, as well as self referral. Coaches refer to the performance team which includes health professionals such as the team doctor, athletic trainer, exercise physiologist, nutritionist, as well as the coach and a representative of athletic administration. The health professional consults with the athlete referred for counseling or athletes who self refer. The treatment options for the eating disorder prone athletes, or the athlete with eating disorders include, in addition to medical treatment, assertion groups and other group therapy, self-help programs and nutrition counseling. There is weekly progress consultation between the head coach, athlete and counselor to deal with training/stress/weight concerns (assuming the athlete wishes the coach to be involved). There is also an educational

TABLE 7

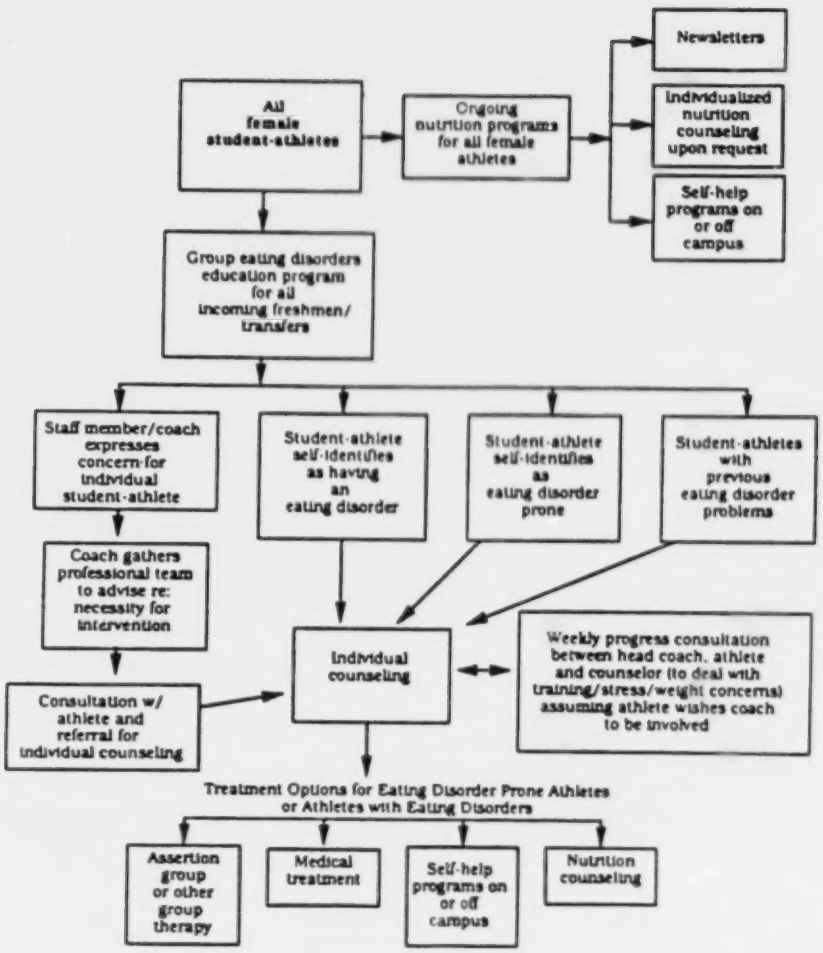
All female student-athletes
Ongoing nutrition programs for all female athletes
Newsletters
Individualized nutrition counseling upon request
Self-help programs on or off campus
Group eating disorders education program for all incoming freshmen/ transfers
Staff member/coach expresses concern for individual student-athlete
Student-athlete self-identifies as having an eating disorder
Student-athlete self-identifies as eating disorder prone
Student-athletes with previous eating disorder problems
Coach gathers professional team to advise re: necessity for intervention
Individual counseling
Weekly progress consultation between head coach, athlete and counselor (to deal with training/stress/weight concerns) assuming athlete wishes coach to be involved
Consultation w/ athlete and referral for individual counseling
Treatment Options for Eating Disorder Prone Athletes or Athletes with Eating Disorders
Assertion group or other group therapy
Medical treatment
Self-help programs on or off campus
Nutrition counseling

Figure 22-4

program for the coaches focusing on psychological considerations in dealing with weight and anatomical and physiological considerations in determining optimal body composition for performance and health. It should be noted that there is an appeal process for student athletes which involves a reassessment of weight goals via a sophisticated testing team of outside experts.

Randa Ryan indicated that there was some opposition initially to the acknowledgement of eating disorders as a problem, and the transfer of authority for weight and fitness from the coach to the performance enhancement team. Bringing eating disorders out of the closet raises concerns among coaches regarding the image of the program, recruitment implications and usurping the authority of the coach. However, after a one-year trial period there is unanimous support from both the health professionals and the sport establishment. Much of this may come from the evaluation and policy research which was conducted during the initial year which attested to the fact that there was not only an enhancement of the overall fitness and health of female athletes, but also no deterioration in overall performance. It should be noted that the University of Texas is one of three programs in the United States where the athletic department is under the administration of an independent women's athletic department.

Researchers in the sport and athletic area have turned out a number of excellent publications which may be of interest to health professionals, fitness participants, instructors and administrators.

The International Amateur Athletic Federation (IAAF) published "Too Thin to Win?" in 1989 acknowledging eating disorders as a major problem. The National Collegiate Athletic Association (NCAA) has turned out a pamphlet on "Nutrition and Eating Disorders in College Athletes" (1991) and has also developed three audiovisual aids on nutrition and eating disorders: "Afraid to Eat: Eating Disorders in Student Athletes"; "Out of Bounds: Nutrition and Weight"; and "Eating Disorders: What Can We Do?" the Sports Medicine Council of Canada has also developed "Desperate Measures: Eating Disorders in Athletes" as an audiovisual aid.

The Canadian Association for Health, Physical Education and Recreation published a "Special Issue: Eating Disorders" as the July/August 1986 Cahper Journal. The Association for the Advancement of Health Education of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) has produced a Handbook for Coaches on Eating Disorders in Athletics, which was edited by Susan Chappell Holliman and published by Kendall-Hunt (1991). AAHPERD has also produced Eating Disorders Among Athletes: Theory, Issues and Research, which was edited by David R. Black (1991). Eating, Body Weight and Performance in Athletics: Disorders in Modern Society by Kelly D. Brownell, Judith Rodin and Jack H. Wilmore (1991) is also an excellent resource which includes the chapter by Randa Ryan on "Management of Eating Disorder Problems in Athletic Settings."

Summary

Five socio-cultural influences have been associated with the increase and prevalence of eating disorders:

1. Pressure to be thin - "No one can be too rich or too thin."
2. Glorification of youth - "Not how good you look, but how long you look good."
3. The changing role of females "having it all and doing it all in a Size 5 dress"
4. Media image and marketing of the super woman - "Virginia Slims and all that jazz."
5. The sport and fitness craze - "the tyranny of elitism."

These pressures have increased in modern society as we have passed from the Greek ideal of sport, "mens sano, corporo sano" - "a sound mind in a sound body" - to current "flash and trash" fitness and better teams through starvation and steroids. Health professionals, sport coaches, instructors and administrators should work against the following Manstream sport culture influences:

1. The 'Thinning edge' for judges and coaches
2. Obsolescent adolescent athletes
3. Harassed 'Golden Girls' in a paternalistic sport world
4. Sports Illustrated and Vogue fitness marketing
5. Anorexia Athletica and Bulimic Cosmetic Fitness

In summary, the paternalistic sport power structure which controls, power, prestige and privilege has led to the great 'weight shift' which prompted women and men to turn to the "one stone solution" (one

stone equals fourteen pounds). If she could just lose one stone through starvation and he could gain one stone through steroids, they would be winners.

The Edible Woman (Margaret Atwood, 1989) prompted by the Body/Politics (Mary Jacobus et al., 1990) associates The Hungry Self: Women Eating and Identity (Kim Chernin, 1986) and goes on a Hunger Strike (Susie Orbach, 1986), since Fat is a Feminist Issue (Susie Orbach, 1979) and believes she is Never Too Thin (Eva Szekeley, 1988). The Obsession: Reflections on the Tyranny of Slenderness (Kim Chernin, 1981) helps explain why women are Never Too Thin: Why Women Are at War With Their Bodies (Roberta Pollack Seid, 1989).

Holy Anorexia (Rudolph Bell, 1988) Seen Through Clothes (Ann Holland, 1988) Is It Any Wonder That We Have Eating Disorders (L.K. George Hsu, 1990) and Fasting Girls: The Emergence of Anorexia Nervosa as a Modern Disease (Joan Jacobs Brumberg, 1988) resulting from the The Beauty Myth (Naomi Wolf, 1991).

References

Amber, Neil. (March 19, 1983). Suicide attempted: Weight obsession problem in sports. Globe and Mail, p.55.

Anthony, J., Wood, I.K., & Goldberg, S.C. (1982). Determining the populations at risk for developing anorexia nervosa based on selection of college major. Psychiatry Research, 7, 53-58.

Atwood, Margaret. (1989). The Edible Woman. London: Virago Press.

Avener, J. (Nov., 1985). Eating disorders in young athletes. The Physician and Sports Medicine, 13(11), 89-106.

Bell, Rudolph. (1985). Holy Anorexia. Chicago: The University of Chicago Press.

Black, David H. (Ed.). (1991). Eating Disorders Among Athletes: Theory, Issues and Research. Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.

Black, D., & Burkes-Miller, M.E. (1988). Male and female college athletes: Use of anorexia nervosa and bulimia nervosa weight loss methods. Research Quarterly, 59(3), 252-256.

Blumenthal, J.A., Rose, S. & Chang, J.L. (1985). Anorexia nervosa and exercise: implications and recent findings. Sports Medicine, 2, 237-247.

Borgen, Jorunn Sundgot. (Feb., 1987). Eating disorders among female athletes in The Physician and Sport Medicine, 15(2), 89-95.

Borgen, Jorunn Sundgot. (Oct., 1991). Pathogenic weight control behaviour and self-reported eating disorders in Norwegian female elite athletes, Presentation and Paper at the University of Windsor, Faculty of Human Kinetics.

Brown, Raymond, Holman, Marge and Moriarty, Dick (1984). Sport, Physical Activity and the Law. Ottawa, Ont.: Canadian Association for Health, Physical Education and Recreation Administrative Monograph Series.

Brownell, Kelly D., Judith Rodin and Jack H. Wilmore. (1991). Eating, Body Weight and Performance in Athletics: Disorders of Modern Society. Philadelphia, PA: Lea & Febiger.

Brownell, K.D., Nelson, J.H. (1987). Weight regulation practices athletes: analysis of metabolic and health effects. Medicine and Science in Sports and Exercise, 19(6), 546-556.

Bruch, Hilde, Danita Czyzewski and Melanie A. Shur, eds. (1988). Conversations with Anorexics. New York: Basic Books.

Bruch, Hilde. (1974). Eating Disorders: Obesity, Anorexia Nervosa and the Person Within. London: Routledge and Kegan Paul.

Bruche, Hilde. (1978). The Golden Cage: The Enigma of Anorexia Nervosa. London: Open Books.

Brumberg, Joan Jacobs. (1988). Fasting Girls: The Emergence of Anorexia Nervosa as a Modern Disease. Cambridge, Mass.: Harvard University Press.

Buickel, S. (1983). Anorexia nervosa and bulimia in athletes. Journal of the National Athletic Trainer Association, 18, 137-138.

Burckes-Miller, M.E., & Black, D.R. (Feb/March, 1988a). Eating disorders: A problem in athletics? Health Education Research, 3, 22-23.

Burckes-Miller, M.E., & Black, D.R. (1988b). Male and female college athletes: Prevalence of anorexia nervosa and bulimia nervosa. Athletic Training, 23(2), 137-141.

Cahper (July/August, 1986). Special Issue: Eating Disorders. Canadian Association for Health, Physical education and Recreation Journal.

Chernin, Kim. (1986). The Hungry Self: Women, Eating and Identity. London: Virago Press.

Chernin, Kim. (1981). The Obession: Reflections on the Tyranny of Slenderness. New York: Perennial Library.

Costar, E.D. (1983). Eating Disorders: Gymnasts at Risk. International Gymnast, 25(11), 58-59.

Crago, M., Yates, A., Beutler, L.E., & Arizmendi, T.G. (1985). Height and weight ratios among female athletes: Are collegiate athletics the precursors to an anorexic syndrome? International Journal of Eating Disorders, 4(1), 79-87.

Dick, Randall W. (September 17, 1990). NCAA Eating Disorder Survey. NCAA News.

Doherly, Sharon. (March/April, 1988). The Glorification of Thinness. Energy: Canada's Health & Fitness Newspaper, 1(2), 1 & 8.

Donovan, Brian and Moriarty, Dick. May/June 1986. Substance abuse by athletes in Canada. Coaching Review, 9, 33-36.

Dubin, Charles. (1990). Commission of Inquiry Into the Use of Drugs and Banned Practices Intended to Increase Athletic Performance. Ottawa: Government Publishing, Canada.

Ford, Christine. (1991). The Association Between the Knowledge of Bulimia, Bulimic Tendencies, Exercise Involvement and Body Image Distortion Among Ontario Fitness Council Members. Unpublished MHK Thesis, University of Windsor, Windsor, Ontario.

Garner, D.M., Garfinkel, P.E., Olmstead, M.P. (1983). An overview of sociocultural factors in the development of anorexia nervosa. Anorexia nervosa: Recent developments in research. New York: Alan R. Liss, Inc.

Garner, D.M. (1984). Research on eating disorders and sport/fitness participation. Proceedings, Ottawa Cahper, Ottawa, Ontario, Canada. (presentation available on audio tape.)

Garner, D.M. & Olmstead, M.P. (1984). Manual for Eating Disorder Inventory. Odessa, FL: Psychological Assessment Resources, Inc.

Garner, D.M., Olmstead, M.P. & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. International Journal of Eating Disorders, 2, 15-34.

Garner, D.M., Olmstead, M.P., Polivy, J. & Garfinkel, P.E. (1984). Comparison between weight-preoccupied women and anorexia nervosa. Psychosomatic Medicine, 46, 255-266.

Gymnasts strive dangerously for the Comaneci look. (August, 1983). People Magazine.

Hamilton, L.H., Brooks-Gunn, J., Warren, M.P. & Hamilton, W.G. (July/August, 1986). the Impact of Thinness and Diet on the Professional Ballet Dancer. Cahper Journal, 52 (4), 30-35.

Hamilton, L.H., Brooks-Gunn, J., & Warren, M.P. (1985). Sociocultural influences on eating disorders in professional female ballet dancers. International Journal of Eating Disorders, 4(4), 465-477.

Hollander, Ann. (1988). Seeing Through Clothes. New York: Penguin.

Holliman, Susan Chappell, ed. (1991). Handbook for Coaches on Eating Disorders and Athletics. Dubuque, Iowa: Kendall-Hunt Publishing Company.

Holman, Marge and Moriarty, Dick. (March 15, 1989). American sport equity by legislation and litigation: comparative Canadian-American trends. Second Annual Conference on Sport, Physical Education, Recreation and Law Proceedings. Jekyll Island, Georgia.

Hyrcaiko, Dennis, Moriarty, Dick, and McCabe, Ann. (1978). Sport, Physical Activity and TV Role Models. Ottawa, Ont.: Canadian Association for Health, Physical Education and Recreation Sociology of Sport Series.

Hsu, L.K. George. (1990). Eating Disorders. New York: The Guilford Press.

Jacobus, Mary, Evelyn Fox Keller and Sally Shuttleworth, eds. (1990). Body/Politics: Women and the Discourses of Science. New York: Routledge. See especially, Susan Bordo, Reading the slender body, 83-112.

Johnson. (Nov., 1986). Female athlete and eating disorders. Athletic Director & Coach, 4.

Katz, J.L. (1986). Long distance running, anorexia nervosa and bulimia: report of the two uses. Comprehensive Psychiatry, 27(1), 74-78.

Lawrence, Marilyn. (1988). The Anorexic Experience. London: The Women's Press.

Lawrence, Marilyn, ed. (1987). Fed Up and Hungry. London: The Women's Press.

Leichner, Pierre, Rallo, J.S., Leichner, J. (1989). A descriptive profile of eating attitudes and behaviour among exercising women. Montreal, PQ: Unpublished paper from Douglas Hospital.

Leichner, P. (June, 1985). Anorexia nervosa, bulimia and exercise. ANAB.

Loosemore P., Marble H., Gallen, R.J., Balance W.E.G., and Moriarty, R.J. (1989). Body image distortion in selected groups of men. Psychology: Quarterly Journal of Human Behaviour, 22,(2/3), 56-59.

Mable, H. (1985). Body image dissatisfaction and body image distortion in an non-clinical population. Unpublished Master's thesis, University of Windsor, Windsor, Ontario.

Mable, H. (1989). The meaning and measurement of body image disturbance in college women. Unpublished Ph.D. dissertation, University of Windsor, Windsor, Ontario.

Mable, H., Balance, W. & Galgan, R. (1986). Body-image distortion and dissatisfaction in university students. Perceptual and Motor Skills, 63, 907-911.

Mable, H., Balance, W. & Galgan, R. (1988). Reliability and accuracy of self-report of a new body-image measure. Perceptual and Motor Skills, 66, 861-862.

MacIntosh, Don, Tom Bedecki and C.E.S. Franks (1987). Sport & Politics in Canada: Federal Government Involvement Since 1961. Kingston & Montreal, Canada: McGill-Queens University Press.

Marano, Hara Estroff. (1991). Style Is Not a Size: Looking and Feeling Great in the Body You Have. Toronto: Bantam Books.

Metropolitan Life Insurance Company. (Jan-June 1983). 1983 Metropolitan height and weight tables. Statistical Bulletin of the Metropolitan Life Insurance Company, 64, 2-9.

Moriarty, Dick. (1991). Athletes who 'lose' more than they win, and Strategies for prevention intervention, (with other authors) in Handbook for Coaches on Eating Disorders and Athletes. Dubuque, IA: Kendall Hunt Publishing Company.

Moriarty, D., Moriarty, M., Moriarty, K., & Ford, C. (1990). The role of sports-fitness in eating disorders: Cosmetic fitness - from starvation to steriods. International Congress on Youth, Leisure and Physical Activity. Brussels, Belgium.

Moriarty, Dick, ed. (July/August, 1986). Eating Disorders - Special Issue. Journal of the Canadian Association for Health, Physical Education and Recreation, 52, (4).

Moriarty, D., & Moriarty, M. (July/Aug., 1986). Sport/Fitness programs and socio-cultural influences in eating disorders. CAPHER Journal, 52(4), 4-9.

Moriarty, Dick, Guilmette, Ann Marie, & Zarebski, John. (December, 1981) Youth/child studies in the 70's: towards evaluation and policy research. The Society for Advancement of Social Psychology. VII, (6).

Moriarty, Dick, Guilmette, Ann Marie & Leduc, Lawrence. (September 1978) School sport, amateur sport, national/international competition professional athletics: where do Canadians stand? Canadian Journal of Applied Sport Sciences, 3, (3), 133-143.

Moriarty, Dick et al. (1982). Changes affecting coaches - coaches affecting change, in Proceedings of the Northern Ireland Institute of Coaching Annual Guinness Conference. Belfast, Northern Ireland: Ulster Polytechnical Institute.

Moriarty, Dick. (Spring, 1983). The rise and fall of youth sport organizations, in Action, III(1) Ottawa, Ont.: Canadian Council on Children and Youth. Reprinted in Fall, 1983, III, (2).

Moriarty, Dick, Keith, Marion, & Porter, James (1989). Change agent research for the Bana-Can/Am summer camp for young people with eating disorders. Research in Education. CG021412; CG021412, 16 pp.

Moriarty, Dick, Ford, C., Rawlings, J., & Leichner, P. (1991) Recent Research in Eating Disorders and Body Image Distortion Among Aerobic Instructors and Exercise Participants. Research in Education, in press.

Mundi-Brander and Larkenmeyer, J.P. (April, 1986). Eating disorders in adolescent males. Paper presented at 2nd International Conference on Eating Disorders, New York City.

National Collegiate Athletic Association (NCAA). (1991). Nutrition and Eating Disorders in College Athletics. Overland Park, KS: NCAA.

Nelson, Mariah Burton. (1991). Are We Winning Yet? How Women Are Changing Sports and Sports Are Changing Women. New York: Random House.

Orbach, Susie. (1979). Fat Is a Feminist Issue. London, Hamlyn.

Orbach, Susie. (1986). Hunger Strike: The Anorexic's Struggle as a Metaphor for our Age. London: Faber and Faber. (especially pp. 74-95).

Perry, Patricia. (August/September 1986). Hooked on Perfection. Verve, 40, 42. 79, 80.

Pomery, Sara B. (1975). Goddesses, Whores, Wives and Slaves: Women in Classical Antiquity. New York: Schocken Books.

Pyke, Magnus. (1970). Man and Food. London: Weidenfeld & Nicholson.

Rawlings, J. (Winter, 1990). The predisposition of eating disorders and body image distortion in Ontario Fitness Council Members. Ontario Fitness Council Fit to Print, 5(5), 1, 2, & 11.

Rawlings, J. (1989). The predisposition of eating disorders and body image distortion in Ontario Fitness Council Members. Unpublished Master's Major Paper, University of Windsor, Windsor, Ontario.

Rosen, L., McKeag, D.B., Hough, D.O., & Curley, V. (1986). Pathogenic weight control behaviour in female athletes. The Physician and Sports Medicine, 14, 79-84.

Rosen, L. (1991). Personal correspondence quoting Garner, D. & Rosen, L. (1991) Eating Disorders Among Athletes: Research and Recommenation. Journal of Applied Sport Research, 5 (2), 00-00 (in press).

Rosen, L.W. & Hough, D. (September, 1988) Pathogenic Weight-Control Behavior of Female College Gymnasts. The Physician and Sports Medicine, 16 (9), 141-144.

Ryan, Randa. (1989). Eating Disorders: What Swimmers, Coaches and Parents Should Know. Austin, TX: University of Texas or Ford Lauderdale, FL: American Swimming Coaches Association.

Seid, Roberta Pollack. (1989). Never Too Thin: Why Women Are at War With Their Bodies. New York: Prentice Hall.

Shields, Jody. (April, 1991). Fitness Special: The way we work out: from Indian Clubs, Shake-A-Way to the Burn. Vogue, 214-222.

Smith, M., Pruitt, J., Mann, L. & Thelen, M. (1986). Attitudes and knowledge regarding bulimia and anorexia nervosa. International Journal of Eating Disorders, 5, 545-553.

Smith, M. & Thelen, M. (1984). Development and validation of a test for bulimia. Journal of Consulting and Clinical Psychology, 52, 863-872.

Smith, N.J. (1976). Gaining and losing weight in sports, Journal of American Medical Association, 236, 149-154.

Smith, B. (Nov. 8, 1986). Food threatens skaters career. Globe and Mail.

Sundland, Tracey (March 19, 1983). Marathoner attempts suicide. Globe and Mail: S5.

Szekeley, Eva. (1988). Never Too Thin. Toronto: The Women's Press.

The little known male anorexic. (May, 1983). Psychology Today, 21.

Tolmach Lakoff, Robin and Raquel L. Scherr. (1984). Face Value: The Politics of Beauty. Boston: Routledge and Kegan Paul.

Wilkinson, N. (1989). An investigation of the complusive addictive, perceptual and motivational dimensions associated with excessive excercise behaviour in women. Unpublished doctoral dissertation, University of Windsor, Windsor, Ontario.

Wilmore, J.H. & D.L. (1987). Training for Sport and Activity: The Physiological Basis of the Conditioning Process, 3rd Ed. Boston, MA: Allyn and Bacon.

Wolf, Naomi. (1991). The Beauty Myth: How Images of Beauty are Used Against Women. New York: William Morrow and Company.

Woolf, Virginia. (1989). A Room of One's Own. San Diego: Harvest/HBJ.

Audiovisual Resources:

Sport Medicine Council of Canada. (November, 1990). "Desperate Measures: Eating Disorders in Athletics." VICOM: Vancouver 1-800-661-6552.

NCAA. (1990). Nutrition and Eating Disorders
"Afraid to Eat: Eating Disorders and the Student Athlete."
"Out of Balance: Nutrition and Weight."
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OPINIONNAIRE

EATING DISORDERS AND SPORT AND FITNESS ACTIVITIES

Respondent: _____ Telephone No. ( ) _____

Address

_____

1. What percentage of your clients are involved in organized sport or fitness activities out of a total yearly client population?

_____

2. What type of sport/fitness activities do you encounter, ranked in order of prevalence.

1. _____ 3. _____
2. _____ 4. _____

3. What problems (beyond normal) do you encounter in treating athletes or fitness enthusiasts?

_____

_____

_____

4. What problems (if any) do you encounter in dealing with the sport or fitness establishment?

_____

_____

_____

5. Who refers athletes or those involved in excessive exercise or running to you?

_____

6. What is your basic treatment modality and how does it differ for athletes or fitness addicts?

_____

_____

_____

7. What is your policy on continued athletic or exercise activity during the course of treatment and in the post treatment period?

_____

_____

_____

8. What is the role of the coach, fitness instructor, physical health educator or significant others from the sport and fitness industry in the prevention, detection and treatment of eating disordered individuals.

_____

_____

_____

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TABLE 4—CONSENSUS: HEALTH PROFESSIONALS

EATING DISORDERS AND SPORT AND FITNESS ACTIVITIES

1. Clients involved in sport/fitness activity:
   Percentage: 50%; Range: 10%-80%.

2. Type of sport/fitness exercises:
   1. aesthetic (e.g. gymnastics, diving & figure skating)
   2. weight dependent (e.g. wrestling & rowing)
   3. endurance (e.g. jogging, cycling & swimming)
   4. ball games (e.g. volleyball)
   5. fitness (e.g. aerobic, dance & exercise).

3. Problems with clients:
   Pressure from coaches/trainers to lose weight;
   excessive reliance on weight lose to improve performance;
   obsessive exercise and guilt when not overtraining;
   stress fractures;
   culturally endorsed abnormal behaviour.

4. **Problems with sport/fitness establishment:**
   Ignorance of dieting dangers;
   no counselling of athletes regarding dangers of being thin vs. fit; denial of the problem;
   fear on part of coaches/trainers & team doctor authority will be usurped;
   agencies cooperate once informed and convinced of problem.

5. **Referrals:** physicians, parents/teachers, coaches/trainers/team physicians.

6. **Treatment Modality:**
   Cognitive; behavioural; psychotherapy; pharmacotherapy; family therapy; involve health educator and/or coach/trainer in the process and use athlete's desire to achieve change stressing long term effect of maladaptive behaviour.

7. Continued athletic/exercise activity during treatment:
   Ranges from no activity in acute stage; most favour moderate supervised activity but avoidance of competition and balance in nutrition, rest, and activity.

8. Role of coach/trainer/administrator:
   Part of the problem but could be part of the solution;
   often precipitate and perpetuate eating disorders;
   decrease emphasis on body weight;
   increase awareness of risk of dieting and being under weight; osteoporosis, menstrual problems, etc.;
   provide nutritional guidance; know signs, symptoms, and characteristics; refer to medical practitioners.
   Be part of medical team!

Respondent: P.J.P. Beumont, M.D. Telephone No. (2) 6923449
Address: Dept. of Psychiatry
University of Sydney
Australia 2006

1. **Percentage:** 70%

2. **Type of sport/fitness exercise:**
1. Walking (> 1 m/day)
2. Jogging/Running
3. Home Callisthenics
4. Aerobic Gym Classes

3. **Problems with sport/fitness enthusiasts:**
Obsessive adherence to exercise schedules
Orthopaedic e.g. stress fractures/connective tissue damage
Weight loss/ poor response to nutritional rehabilitation

4. **Problems with sport/fitness establishment:**
1. Fail to address exercise & concomitant eating disorder and/or obsessive preoccupation with weight.
2. Coaches & ballet teachers advise clients to lose weight below optimal level i.e. to a body mass index of 17 or 18 -- 70% of optimal range!

5. **Referrals:**
Family Physicians & school or college counsellors--very rarely sports coaches.

6. **Treatment Modality:**
Basic cognitive behavioral programme plus educational advice from one of our nurses who was previously a gym instructor.

7. **Continued athletic/exercise activity during treatment:**
We have a strictly supervised exercise programme as part of our treatment--under the direction of the nurse mentioned above.

8. **Role of coach/trainer/administrator:**
They should (but seldom do) carefully assess whether their clients have an underlying distortion of attitude about weight/fitness. They should be aware of complications such as osteoporosis and menstrual problems.

Respondent: Sundgot Borgen, Ph.D. and Svein Oseid, M.D.
Address: Norwegian University of Sport and Physical Education
P.O. Box 40 Kringsjaa
0807 Oslo 8, Norway

1. **Percentage:** 80% of clients involved in top level sport; remainder are undergraduate/graduate Physical Education students and former athletes.

2. **Type of exercises:** 1. endurance events competitors
2. aesthetic sports (e.g. gymnastics)
3. weight-dependent sports (wrestling, karate, & judo)
4. ball games.

3. Our experience say easier to treat athletes than non-athletes. Only extra problem is to decrease feeling of guilt when told not to "overexercise".

4. Problems initially with some sport federations (gymnastics, track and field), but once aware of problem and facts (the high number of athletes with eating disorders) most coaches and leaders cooperate in the treatment.

5. Most recruited to research project. Some referred by coaches and youngest by parents. "Open door" policy for students.

6. **Treatment Modality:** Once athlete admits (to self and clinician) that they have a eating disorder they are "ready & willing" to change their behaviour and treatment starts. Athlete's wish "to achieve" is used as stimulator to change & consequence of behaviour on performance is stressed.

7. **Continue athletic or exercise activity** during the course of treatment but stay out of competition during acute stage of disorder.

8. **Coaches and physical health educators** should be alerted to signs and symptoms. They should not diagnose but are in an excellent position to observe early signs of disorder and direct athletes to professionals. Coaches should realize their strong influence and know E.D. can be triggered by a single offhand remark. To comment on body size or require weight loss without proper guidance is to risk pushing a highly motivated, uniformed athlete into dangerous unhealthy behaviour.-----Identify realistic weight goals; Provide nutritional guidance; Monitor weight; Be observant; Seek professional help; Be a team member!

Respondent: Amy Baker Dennis, M.A.
Affiliated Psychologist, P.C.
74 W. Lone Lake, Suite 104 Telephone (313) 642-6066
Bloomfield Hills
Michigan, 48304-2770

1. **Percentage:** 60%.

2. **Type of sport/fitness exercise:**
   1. Aerobics
   2. Running
   3. Machines & weights
   4. Biking & Swimming

3. **Problems with sport/fitness enthusiasts:**
   Decrease obsessive compulsive nature of their exercise.
   Use exercise for fitness vs weight control or loss.

4. **Problems with sport/fitness establishment:**
   NA

5. **Referrals:**
   M.D.'s, Professors, Guidance Counsellors, Parents.

6. **Treatment Modality:**
   No difference, excessive exercise form of purging.

7. **Continued athletic/exercise activity during treatment:**
   Severe anorexic cut out completely till weight regained.
   For others wean by decreasing number of hours/days per week to 3 times a week for 30-45 minutes.

8. **Role of coach/trainer administrator:**
   First line of intervention.
   They must be aware of sign and symptoms.
   Refer for treatment at the earliest time to insure recovery.

Respondent: David S. Goldbloom, M.D.
Address: Eaton 8N-219 Telephone No. (416) 340-3050
The Toronto General Hospital
200 Elizabeth St., Toronto, Ontario, M5G 2C4

1. **Percentage involved in sport:** 30-40%

2. **Type of sport/fitness exercise:**
   1. Aerobics
   2. Running
   3. Weight training
   4. Swimming

3. **Problems with sport/fitness enthusiasts:**
   Reluctance to relinquish exercise for the express purpose of weight loss.

4. **Problems with sport/fitness establishment:**
   Undue emphasis on weight and thinness rather than fitness.

5. **Referrals:**
   General Practitioners.

6. **Treatment Modality:**
   Psychotherapy
   Pharmacotherapy
   Special need to look at the reasons that underlie the exercise.

7. **Continued athletic/exercise activity during treatment:**
   Moderation:
   For pleasure rather than weight loss.

8. **Role of coach/trainer/administrator:**
   Increased awareness of risk profile for eating disorders.
   Decreased emphasis on body weight.

Respondent: Sidney Kennedy, M.D. Telephone No. (416) 340-3041
Address: The Toronto General Hospital
200 Elizabeth St. 8 EN-235
Toronto, Ontario M5G 2C4

1. **Percentage:** 10%

2. **Type of sport/fitness exercise:**
   1. Running
   2. Aerobics
   3. Cycling
   4. Swimming

3. **Problems with sport/fitness enthusiasts:**
   Cultural endorsement of abnormal behaviour by their coaches and peers.

4.

5. **Referrals:**
   General Practitioners.

6. N.C.

7. **Continued athletic/exercise activity during treatment:**
   Not permitted except for social activity such as volleyball.

8. **Role of coach/trainer administrator:**
   Could be a major role. I recommend increased awareness of early symptoms and signs.

Respondent: Arthur Robin, Ph.D.
Patricia Seagle, M.D.
Address: Psychology, Telephone No. (313) 745-4878
Children's Hospital
Detroit, Michigan 48201

1. **Percentage:** 80%.

2. **Type of sport/fitness exercise:**
   1. Track, running
   2. Biking
   3. Soccer

3. **Problems with sport/fitness enthusiasts:**
   Won't moderate level of activity
   Denial of health issues.

4. **Problems with sport/fitness establishment:**
   Don't deal with this establishment.

5. **Referrals:**
   Physicians and Teachers.

6. **Treatment Modality:**
   Family therapy--same for athletes as all others.

7. **Continued athletic/exercise activity during treatment:**
   Restricted during weight gain for anorectics.
   Permitted in moderation post treatment.

8. **Role of coach/trainer administrator:**
   1. Encourage healthy body attitudes.
   2. Referral and early detection.

Respondent: Lionel W. Rosen, M.D.,
Eating Disorders Unit Telephone (517) 353-6654
Dept. of Psychiatry, B 105 W. Fee Hall,
Michigan State University,
East Lansing, Michigan 48824

1. **Percentage:** 65%.

2. **Type of sport/fitness exercise:**
   1. Jogging
   2. Weight training
   3. Biking
   4. Swimming

3. **Problems with sport/fitness enthusiasts:**
   Over-training;
   Excessive food restriction;
   Unrealistic belief of exaggerated reliance upon thinness as a means of improving performance;
   Pressures from coaches/trainers to restrict eating.

4. **Problems with sport/fitness establishment:**
   Lack of knowledge about problems derived from dieting;
   Fear on part of coaches and team physicians of having their authority usurped.

5. **Referrals:**
   Coaches, trainers, team physicians (equally), parents (less frequently).

6. **Treatment Modality:**
   Cognitive-behaviourial;
   with athletes--involve coach and trainer,
   with fitness addicts--it is more one on one.

7. **Continued athletic/exercise activity during treatment:**
   Permit and often encourage continued activity if monitored and within parameters agreed upon in advance, i.e. if indicated, & consistent with weight gain, improved nutrition, rest, etc.

8. **Role of coach/trainer/administrator:**
   These people are critical. They can and often do precipitate or even maintain the pathogenic behaviour through their lack of information; on the other hand, if they are well informed, they can play a major role in the prevention or recovery side of the equation.

Respondent: Howard Steiger, Ph.D.
Douglas Hospital Centre
6775 LaSalle Blvd.
Montreal, Quebec H4H 1R3
Telephone (514) 761-6131 Ext. 2899

1. **Percentage:** 75% (25% A.N., 75% B.N.)

2. **Types of sport/fitness exercise:**
   1. Aerobics
   2. Running, jogging
   3. Free weights
   4. Cycling

3. **Problems with sport/fitness enthusiasts:**
   Avoidance of weight gain
   Exercise = pathogenic behaviour to avoid phobia of weight gain. Exercise like dieting, purging, to suppress fears of normal weight. Develop trusting attitude to body.

4. **Problems with sport/fitness establishment:**
   NA

5. **Referrals:**
   NA

6. **Treatment Modality:**
   NA

7. **Continued athletic/exercise activity during treatment:**
   Exercise for recreational value ;
   Cardiovascular fitness vs weight control.

8. **Role of coach/trainer/administrator:**
   Develop healthy attitude toward exercise;
   Stress reasonable balance limits;
   Achieve balance--personal costs and values;
   Instructors/coaches sometimes guilty of promoting unhealthy attitude of excessive self in the service of sport achievement. Should/could provide: early detection; know etiology and phenomenology; isolate high risk eating disordered vs disordered eating; recognize physiological vulnerabilities of those abusing food and exercise; intervene in cases suggesting high risk pathogenic exercise pursuits.

Respondent: Roger Tonkin, M.D.
Address: McCreary Centre Society Telephone (604) 433-0543
c/o Sunny Hill Hospital for Children
3644 Slocan St., Vancouver, B.C. V5M 3E8

1. **Percentage:** 50%.

2. **Type of sport/fitness exercise:**
   1. Track and Field
   2. Skiing
   3. Tennis
   4. Swimming

3. **Problems with sport/fitness enthusiasts:**
   Stress injury due to exercise.
   Weight change without change in activity.
   Mood change.

4. **Problems with sport/fitness establishment:**
   Lack of awareness.
   Insensitive to athletes needs.
   Push for weight loss.

5. **Referrals:**
   n/a

6. **Treatment Modality:**
   We stress moderation for all.

7. **Continued athletic/exercise activity during treatment:**
   Varies with patients and their motivation.

8. **Role of coach/trainer/administrator:**
   Early detection.
   Restrict participation by E.D. not in Rx..
   Work with Rx team.
   Prevention strategies.

TABLE 5—CONSENSUS: UNIVERSITY & COMMUNITY HEALTH & FITNESS CENTRES

EATING DISORDERS AND SPORT AND FITNESS ACTIVITIES

1. **Clients involved in sport/fitness activities:**
   Percentage: 35%; Range: 10%-100%.

2. **Type of sport/fitness exercises:**
   See Table 6: NCAA Sponsoring Schools Reporting Eating Disorders.

3. **Problems with client:**
   Denial of problem; misconceptions and myths regarding food, weight, and performance; seeking short term performance at cost of long term health; coaches counselling for unhealthy weight practices: i.e. starvation to steroids.

4. **Problems with sport/fitness establishment:**
   Failure to acknowledge the problem; lack of preventive programs; reticent to refer to E.D. program; failure to evaluate health lose for competitive gain.

5. **Referrals:**
   Peers, parents, health professionals, occasionally coaches.

6. **Treatment Modality:**
   Performance Team: University of Texas, Austin--(M.D., psychologist, athletic trainer, nutritionist, coach, and administrator).

7. **Continued athletic/exercise activity during treatment:**
   Restrict if health at risk; moderate and monitor so organized sport is not just replaced by personal addictive exercise.

8. **Role of coach/trainer administrator:**
   Educate on sign, symptoms, and characteristics; identify those at risk; referral for treatment; cooperate in treatment and program; preventive education NCAA & S.M.C. films and publications.

TABLE 6: NCAA SPONSORING SCHOOLS REPORTING EATING DISORDERS

SPORT	SPONSORING SCHOOLS REPORTING EATING DISORDERS	
	93% FEMALES	7% MALES
Gymnastics	48%	2%
Cross Country	23%	3%
Swimming (only)	21%	1%
Track (running events only)	21%	2%
Basketball	13%	*
Soccer	13%	*
Field Hockey	12%	
Volleyball	12%	
Lacrosse	11%	
Softball	10%	
Skiing	8%	
Tennis	8%	
Golf	7%	*
Wrestling		7%
Diving (only)	6%	*
Track (field events only)	2%	
Football		1%
	N=810	N=67

* less than 1%

Adapted from the NCAA News, September 17, 1990.

Respondent: Mae Cleveland, Ph.D.
Nutrition & Fitness Specialist
Address: Florida State University
Thagard Student Health Centre
Tallahassee, Florida 32306-2014

1. **Percentage:** 30%

2. **Type of sport/fitness exercise:**
1. aerobic conditioning class 3. strength conditioning
2. running or walking

3. **Problems with sport/fitness enthusiasts:**
Some engage in non-recommended weight loss or gain methods, i.e. vomiting, steroids.

4. **Problems with sport/fitness establishments:**
Poor nutrition information; unnecessary use of supplements.

5. **Referrals:**
Counselling centre, self referral, nutrition dept., roommates/friends.

6. **Treatment Modality:**
Individual nutrition and training counselling.

7. **Continued athletic/exercise activity during treatment:**
Individual basis in coordination with the coach and counsellor. Some discontinue or moderate or continue-determined by behavioral change and return of health.

8. **Role of coach/trainer/administrator:**
Educate as to problem so they can assist in identification, referral and cooperation in treatment. Use NCAA poster and videos for awareness. Personal contacts to discuss identification and referrals. Eating disorder awareness panel program for athletic dept., sororities, fraternities.

Respondent: Randy Dick
6201 College Blvd. Telephone (913) 339-1822
Overland Park, Kansas, 66211
NCAA

1. Percentage: 100% of over 800 colleges and universities.

2. Types of sport/fitness exercises:
See study.

3. Problems with sport/fitness enthusiastes:
Denial;
Eating disorder or disordered eating;
Optimal body weight/composition for performance over the long haul;

4. Problems with sport/fitness establishment:
Realizing the extent of the problem;
Education and prevention before crisis;
Understanding how good performance can occur for a time while athlete is experiencing eating disorder;

5. Referrals:
N/A

6. Treatment Modality:
Multidimensional eating disorder 'team' including M.D., athletic trainer, psychologist, nutritionist, coach, and administrator. athlete can approach any member of the team.

7. Continued athletic/exercise activity during treatment:
Determined on a case by case basis;
If diagnosis calls for restriction, team should know and monitor so team activity is not replaced with personal activity.

8. Role of coach/trainer/administrator:
Educate themselves and team;
Watch for warning signs and refer E.D.athletes;
Remember health and happiness of athlete is more important than performance.

Respondent: Arlene Iannicello
Address: NAAS
1925 East Dublin Granville Rd.
Columbus, Ohio 43229
Telephone: (614) 846-1833

1. **Percentage:** 40%

2. **Type of sport/fitness exercise:**
   1. gymnastics
   2. aerobic
   3. jogging
   4. lift weights

3. **Problems with sport/fitness enthusiastes:**
   Primarily athletic role often tied to role in family; difficult for patient to change until family dynamics are treated.

4. ***Problems with sport/fitness establishments:***

5. ***Referrals:***
   Colleges, High Schools.

6. ***Treatment Modality:***
   Multi dimensional-allowance is made for history of activity- patient asked to discontinue if physical exam indicates problems.

7. **Continued athletic/exercise activity during treatment:**
   Not allowed if detrimental to health as determined by diagnostic assessment, medical evaluation and patient information.

8. **Role of coach/trainer/administrator:**
   Can be more significant than peers and family when coach establishes an authoritative relationship with the athlete.

Respondent: Sharol Laczkowski
Address: Indiana University Telephone: (812) 855-9585
Health Centre 600 N. Jordan
Bloomington, Indiana 47405

1. **Percentage:** 30-50%

2. **Type of sport/fitness exercise:**
   1. Track & Field
   2. Intramural football
   3. Girls basketball & volleyball
   4. Baseball

3. **Problems with sport/fitness enthusiasts:**
   Eating habits, injuries, stress.

4. **Problems with sport/fitness establishment:**
   Their lack of good information concerning good nutrition, ergogenic aids, ergolytic aids.

5. **Referrals:**
   Programs/outreach activities of the Health & Wellness dept. done on campus, coaches, intramural presidents.

6. **Treatment Modality:**
   Nutritional assessments, fitness assessments, lifestyle assessments: closely monitor their progress over time.

7. **Continued athletic/exercise activity during treatment:**
   Continue activity if no health danger; curb activity if there is danger.

8. **Role of coach/trainer/administrator:**
   Access current and correct nutrition information; know symptoms that cause problems; access to proper referrals; willingness to let the athlete go and get help from health professionals.

Respondent: Pam Lynch, NCS
Address: Nutrition Counselling Services & Associates
5595 Fenwick St. Telephone: (902)421-7512
Suite 311
Halifax, Nova Scotia B3H 4M2

1. **Percentage:**

2. **Type of sport/fitness exercise:**
   1. walking
   2. fitness classes

3. **Problems with sport/fitness enthusiasts:**
   Unrealistic weight goals.

4. **Problems with sport/fitness establishment:**
   Dealing with athletes in aesthetic sports often unrealistic weight demands.

5. **Referrals:**
   Self referrals, coaches, G.P.'s

6. **Treatment Modality:**
   Will only see in conjunction with psychologist or psychiatrist.

7. **Continued athletic/exercise activity during treatment:**
   Depends on psychologist or psychiatrist recommendation.

8. **Role of coach/trained/administrator:**
   Awareness, support, proper referral.
   Only supportive with team of physician, psychologist or psychiatrist and dietitian.

Respondent: Lorraine T. Sterman, Ph.D.
Asst. Clinical Professor,
Address: Teenage Eating Disorder Program
Child & Adolescent Services Telephone: (213) 206-8901
300 UCLA Medical Plaza Suite 2343
Los Angeles, California 90024-6967

1. **Percentage:** 25%

2. **Type of sport/fitness exercise:**
   1. aerobic exercise
   2. running/jogging
   3. weight lifting
   4. bicycling

3. **Problems with sport/fitness enthusiasts:**
   Over-exercising beyond physical limits. Lack of boundaries in terms of safety/health.

4. **Problems with sport/fitness establishments:**
   Lack of knowledge; reticent to refer to eating disorder programs; hesitancy to intervene with eating disorder individual.

5. **Referrals:**
   Parents, teachers, P.E. coaches, school nurses.

6. **Treatment Modality:**
   Similar program but athletes need more information. R involves psychotherapy, plus nutritional R by a dietician, M.D.

7. **Continued athletic/exercise activity during treatment:**
   In hospital restrictions in physical activity until weight allows moderate activity. Outpatient modify activity.

8. **Role of coach/trainer/administrator:**
   Detection! Prevention! Education & referral to appropriate resources! Support of program outlined by professionals.

Respondent: Dr. Jean Rubel
Address: P.O. Box 5102
Eugene, Oregon 97405
Telephone: (503) 344-1144

1. **Percentage:** 15%

2. **Type of sport/fitness exercise:**
   1. Running
   2. Gymnastics

3. **Problems with sport/fitness enthusiasts:**
   Misperceptions and myths re food and weight: e.g. athletes need more protein, women can be healthy and function at 6% body fat.

4. **Problems with sport/fitness establishment:**
   Unrealistic, unhealthy picture of what is healthy/fit; denial of set-point mechanisms.

5. **Referrals:**
   Often the trainers, never the coaches.

6. **Treatment modality:**
   Reality Therapy/Cognitive Therapy. More debunking of misinformation.

7. **Continued athletic/exercise activity during treatment:**
   M.D. decides. Not in medical danger--client and therapist decide in session; in medical danger--refuse to treat if they continue to compete. Will not collude with their denial of danger.

8. **Role of coach/trainer/administrator:**
   Obviously it is primary. Too bad more of them don't realize it and act accordingly!